

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board

Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ALFONS SCHUSTER,
MICHAEL SCHONERT,
ALFRED HIRT and ROBERT WEISS

Appeal No. 2001-0345
Application 09/041,416

ON BRIEF

MAILED

OCT 17 2002

PAT. & T.M. OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

Before THOMAS, FLEMING and RUGGIERO, Administrative Patent Judges.
THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellants have appealed to the Board from the examiner's final rejection of claims 1-10, 12-22, and 29.

Representative claim 1 is reproduced below:

1. A method of imaging and erasing an erasable printing form, comprising the steps of: electrically charging the printing form over its entire surface; applying liquid toner particles, which have one of individual charges opposite the charges of the

printing form, and dipole and multi-pole moments directed opposite the charges of the printing form, to the printing form so that the toner particles are attracted to the entire surface of the printing form to form a layer; controlling the thickness of the layer of liquid toner particles by controlling one of voltage and time during the charging step; fixing the liquid toner particles with a source of energy in accordance with a picture to be printed; one of removing and breaking down non-fixed liquid toner particles to change ink acceptance behavior of the layer; and erasing the printing form as a whole, after an end of a printing process, by removing the fixed liquid toner particles.

The following references are relied on by the examiner:

Back	3,607,255	Sep. 21, 1971
Tomanek	3,650,797	Mar. 21, 1972
Raschke et al. (Raschke)	3,921,527	Nov. 25, 1975
Peterson	4,020,762	May 3, 1977
Chu et al. (Chu)	4,103,616	Aug. 1, 1978
Calabrese et al. (Calabrese)	4,705,696	Nov. 10, 1987
Doyle (EPA)	0 099 264	Jan. 25, 1984

All claims on appeal, claims 1-10, 12-22, and 29 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner relies upon Doyle in view of Raschke and Calabrese as to claims 1-10, 12-14, 19, 20, 22, and 29. To this initial combination of references, the examiner has separately added Back as to claim 15, Chu as to claims 16 and 17, Peterson as to claim 18 and Tomanek as to claim 21.

Rather than repeat the positions of the appellants and the examiner, reference is made to the brief and the answer for the respective details thereof.

OPINION

We sustain all the separately stated rejections of all the claims on appeal under 35 U.S.C. § 103.

At the top of page 8 of the brief, appellants indicate that all claims fall together. More significantly, however, no arguments are presented in the remaining pages of the brief as to any separate claim on appeal. As such, we take as a representative claim, for purposes of rendering this decision, claim 1 on appeal. Substantive arguments are presented by appellants only as to Doyle, Raschke and Calabrese.

We note initially that the conventional approach for electrophotographic printing systems is to first place an electrical charge on the substrate, then fix or image it selectively, followed by the application of toner. In contrast to this approach, the subject matter of the disclosed and claimed invention requires the substrate to be charged over its entire surface, the application of toner (in liquid form) on the

substrate, the toner having a charge opposite the charge on the substrate surface, followed by fixing or imaging. Finally, either the non-fixed toner is removed, or the fixed toner is removed after printing operations.

Our study of Doyle leads us to conclude that this reference provides substantive teachings directly applicable to the subject matter of independent claim 1 not apparently appreciated by both the examiner and appellants. Although we recognize that the embodiments shown in Figures 1 and 2 of Doyle focus upon the use of powdered toner materials, page 3 of Doyle's specification indicates that a liquid toner is alternatively taught or, at a minimum, suggested for use in Doyle's embodiments. Page 3, lines 7-9.

Figure 1 in Doyle shows a substrate that has been charged with a negative or grounded potential with respect to an obviously positive charged potential applied to the toner in the coating station 10. This charging appears to be applicable to the entire surface as well as the application of the powdered toner as well. Exposure station 20 fixes the image on the underlying substrate 1 to the same extent as the fixing step of independent claim 1 on appeal. Finally, the decorating station 30 uses an air knife 31 to remove all non-fixed powdered toner

from the surface of the substrate as required in the alterative recitation¹ in the last three lines of independent claim 1 on appeal. Note the discussion at page 6 of Doyle, lines 7-26.

In a corresponding manner, the embodiment shown in Figure 2 also corresponds generally to the teachings just noted with respect to the Figure 1. These include charging the substrate and providing charged toner particles thereto of opposite charge and the use of a separate exposure station 200 analogous to the exposure station 20 in Figure 1. Finally, the excess toner is removed at the decorating station that has not been fixed to the substrate 1, this removal in part performed by the use of the rotating brush 300. All of this is discussed at page 7 of Doyle.

Furthermore, the Example 4 discussion at the bottom of page 8 of Doyle also indicates the removal of non-fixed toner particles by the use of a separate plastic film placed upon the substrate. In addition to this approach, once exposed to laser light, a similar plastic film placed upon the substrate removes the fixed image, thus alternatively teaching the ability to

¹ The use at the end of claim 1 on appeal of the words "one of removing and breaking down ... and erasing" states an alternative use.

remove fixed toner particles as set forth at the end of claim 1 on appeal.

It is thus apparent that the subject matter of independent claim 1 on appeal is substantially taught by the teachings and showings in Doyle, except for the feature of controlling the thickness of the layer of the toner particles. This feature will be addressed momentarily.

Raschke appears to be cumulative as to teachings of Doyle as explained in the following manner. The discussion at columns 3 and 4 of this reference pertains principally to Figures 1-3. The underlying belt 10 is shown in detail in Figure 2 having a conductive metal backing material 12 to which a dielectric coating 14 has been applied. The corresponding discussion of Figure 1 indicates the charging by the corona charging station 20 of the entire coating surface 10 to which "compatible" charged toner particles, apparently powdered toner particles, are applied from the toner supply 24 by the use of brush 22 as explained in the paragraph bridging columns 3 and 4. After this has been done, the belt 10 rotates further to the imaging system 31 to which the image to be printed is fixed. It appears that the non-fixed toner particles are transferred to the so-called master

sheet depicted in detail in cross-section in Figure 3 and shown to be done at station 34 in Figure 1.

The discussion at the bottom of column 4 of Raschke indicates that the belt 10 is intended to be reused as well as the separate corresponding teaching relative to the master sheet itself at the top of column 5. The examples given at column 5 and 6 indicate that the belt 10 and the toner supplies are respectively charged.

Because of the teaching or alternative suggestion at the top of page 3 of Doyle to use a liquid-type toner in place of the powdered toner in this reference, the artisan obviously would have turned to the teachings of Calabrese to ascertain the best methodology of ensuring the application of a liquid toner to the substrate surface. The discussion at the bottom of column 5, noted by the examiner in the answer, at lines 57-66 directly teaches the thickness of the liquid toner particles is controlled by voltage and/or time of application during a charging step "to obtain satisfactory toning of the electro-static image on the surface." This paragraph also indicates that it was given to the artisan to determine the optimum conditions, based upon the toner used, and the various process conditions utilized. Thus, this

reference specifically teaches the artisan to utilize routine experimentation to optimize the desired result.

Like the examiner observes in the answer, appellants have no substitutive considerations in the arguments of Calabrese until page 13 of the brief. Because of the specific teaching of the alternative use of liquid and powder-based toners at page 3 of Doyle, a significant number of appellants' arguments in the brief appear to be misplaced. The examiner is correct at pages 7 and 8 of the answer in noting that appellants' own discussion of the prior art at page 1, lines 11 and 12 of the specification indicates that charged dry and liquid toner particles were known to be usable, apparently interchangeably, in the printing arts. Moreover, appellants' own statement at the bottom of page 8 that the toner may be solid or liquid contains no preference for the use of either for their own disclosed invention. According to the above analysis, there is no need to address the motivation argument to substitute a liquid for a solid toner as expressed in the brief because Doyle teaches the alternative use of both.

Furthermore, appellants' urging in the brief that the references respectively teach away from a feature of the claimed invention is misplaced. As to the specific question of "teaching away," our reviewing court in In re Gurley, 27 F.3d 551, 553,


31 USPQ2d 1130, 1131 (Fed. Cir. 1994) stated "[a] reference may be said to teach away when a person of ordinary skill, upon [examining] the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." In light of this guidance, we are unpersuaded by appellants' urging that Raschke teaches away from the use of a liquid toner as expressed at page 14 of the brief. As noted earlier, Raschke is considered by us to be merely cumulative to the teachings already expressed in Doyle. Moreover, merely because a reference does not specifically teach the use of a certain feature or method does not necessarily mean that it teaches away from the use of it in accordance with the above-noted guidance provided by In re Gurley.

In view of the foregoing, the decision of the examiner rejecting all claims on appeal under 35 U.S.C. § 103 is affirmed.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED


James D. Thomas
Administrative Patent Judge


Michael R. Fleming
Administrative Patent Judge

Joseph F. Ruggiero
Joseph F. Ruggiero
Administrative Patent Judge

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